

In the Claims:

1. (Currently Amended) A method for optimizing private network file transfers in a peer-to-peer public network, the peer-to-peer public network including a server and a plurality of nodes, wherein at least two of the ~~node~~ plurality of nodes are part of a same private network, the method comprising the steps of:
 - (a) receiving by the server a search request from a first node of the plurality of nodes in the peer-to-peer public network for a file;
 - (b) determining by the server that the file is stored on a second node of the plurality of nodes in the peer-to-peer network;
 - (c) determining by the server that the first and second nodes are part of the same private network; and
 - (d) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network.
2. (Previously Presented) The method of claim 1 further wherein step (a) includes the step of registering a client IP address, a subnet mask, and a peer IP address of both the first and second nodes with the server.
3. (Original) The method of claim 2 wherein step (a) further includes the step of registering with the server whether network address translation (NAT) has been performed on the first and second nodes and whether the first and second nodes are directly reachable from other nodes on the public network or unreachable.
4. (Original) The method of claim 3 wherein step (a) further includes the step of determining that NAT has been performed on a particular node when the node's client IP address does not match the node's peer IP address.
5. (Original) The method of claim 4 wherein step (a) further includes the step of determining that a particular node is directly reachable from other nodes on the public network when the server can connect with the node using the node's client IP address.

6. (Original) The method of claim 2 wherein step (a) further includes the step of storing the client IP address, a subnet mask, and a peer IP address of both the first and second nodes in a node registry.
7. (Original) The method of claim 1 wherein step (a) further includes the step of allowing a user of the first node to enter search terms for finding a particular file.
8. (Currently Amended) The method of claim 7 wherein step (b) further includes the steps of querying a database containing file names with the search terms to find file names matching the search terms, and [[by]] identifying nodes containing the matching file, including the second node.
9. (Original) The method of claim 4 wherein step (c) further includes the steps of:
 - (i) determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node, when
 - (1) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match, or
 - (2) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match.
10. (Previously Presented) The method of claim 9 wherein step (c) further includes the steps of:
 - (ii) returning a list of search results from the server to the first node, where the list includes the identities and addresses of the matching nodes, IP addresses, and subnet masks.
11. (Original) The method of claim 10 wherein step (c)(ii) further includes the step of sorting the search results first by locally reachable nodes followed by the directly reachable nodes.
12. (Currently Amended) The method of claim 10 wherein step (d) further includes the steps of:

- (i) ~~using sending~~ the client IP address of the second node to the first node ~~such that the first nodes sends~~ ~~send~~-a request for the file ~~from the first node~~ to the second node using the client IP address of the second node; and
- (ii) sending the file from the second node to the first node using the client IP address of the first node.

13. (Currently Amended) A peer-to-peer public network, comprising
at least one server coupled to the public network;
a first plurality of nodes coupled to the public network;
a private network including first and second nodes of the first plurality of nodes coupled to the public network, wherein when the server receives a search request from ~~[[a]]~~ the first node for a file, the server
determines that the file is stored on ~~[[a]]~~ the second node,
determines that the first and second nodes are part of the same private network,
and
sends instructions to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network.
14. (Previously Presented) The public network of claim 13 wherein a client IP address, a subnet mask, and a peer IP address of both the first and second nodes are registered with the server.
15. (Original) The public network of claim 14 wherein the server registers whether network address translation (NAT) has been performed on the first and second nodes and whether the first and second nodes are directly reachable from other nodes on the public network or unreachable.
16. (Original) The public network of claim 15 wherein it is determined that NAT has been performed on a particular node when the node's client IP address does not match the node's peer IP address.

17. (Original) The public network of claim 16 wherein it is determined that a particular node is directly reachable from other nodes on the public network when the server can connect with the node using the node's client IP address.
18. (Original) The public network of claim 17 wherein the client IP address, a subnet mask, and a peer IP address of both the first and second nodes are stored in a node registry.
19. (Original) The public network of claim 13 wherein a user of the first node enters search terms for finding a particular file.
20. (Currently Amended) The public network of claim 18 wherein it is determined the file is stored on the second node by querying a database containing file names with the search terms to find file names matching the search terms, and [[by]] identifying nodes containing the matching file, including the second node.
21. (Original) The public network of claim 16 wherein it is determined that the second node is part of the same private network as the first node, and therefore locally reachable by the first node, when 1) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match, or 2) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match.
22. (Original) The public network of claim 21 wherein the server returns a list of search results is returned to the first node, where the list includes the identities and addresses of the matching nodes, IP addresses, and subnet masks.
23. (Original) The public network of claim 22 wherein the search results are sorted first by locally reachable nodes followed by the directly reachable nodes.
24. (Original) The public network of claim 22 wherein the client IP address of the second node is used to send a request for the file from the first node to the second node, and the file from the second node is sent to the first node using the client IP address of the first node.

25. (Currently Amended) A computer readable medium containing program instructions for optimizing private network file transfers in a peer-to-peer public network, the peer-to-peer public network including a server and a plurality of nodes, wherein at least two of the ~~node~~ plurality of nodes are part of a same private network, the program instructions for:

- (a) receiving by the server a search request from a first node of the plurality of nodes in the peer-to-peer public network for a file;
- (b) determining by the server that the file is stored on a second node of the plurality of nodes in the peer-to-peer public network;
- (c) determining by the server that the first and second nodes are part of the same private network; and
- (d) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network.

26. (Previously Presented) The computer readable medium of claim 25 further wherein instruction (a) includes the instruction of registering a client IP address, a subnet mask, and a peer IP address of both the first and second nodes with the server.

27. (Original) The computer readable medium of claim 26 wherein instruction (a) further includes the instruction of registering with the server whether network address translation (NAT) has been performed on the first and second nodes and whether the first and second nodes are directly reachable from other nodes on the public network or unreachable.

28. (Original) The computer readable medium of claim 27 wherein instruction (a) further includes the instruction of determining that NAT has been performed on a particular node when the node's client IP address does not match the node's peer IP address.

29. (Original) The computer readable medium of claim 28 wherein instruction (a) further includes the instruction of determining that a particular node is directly reachable from other

nodes on the public network when the server can connect with the node using the node's client IP address.

30. (Original) The computer readable medium of claim 26 wherein instruction (a) further includes the instruction of storing the client IP address, a subnet mask, and a peer IP address of both the first and second nodes in a node registry.

31. (Original) The computer readable medium of claim 25 wherein instruction (a) further includes the instruction of allowing a user of the first node to enter search terms for finding a particular file.

32. (Original) The computer readable medium of claim 30 wherein instruction (b) further includes the instructions of querying a database containing file names with the search terms to find file names matching the search terms, and by identifying nodes containing the matching file, including the second node.

33. (Original) The computer readable medium of claim 28 wherein instruction (c) further includes the instructions of:

- (i) determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node, when
 - (3) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match, or
 - (4) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match.

34. (Original) The computer readable medium of claim 33 wherein instruction (c) further includes the instructions of:

- (ii) returning a list of search results from the server to the first node, where the list includes the identities and addresses of the matching nodes, IP addresses, and subnet masks.

35. (Original) The computer readable medium of claim 34 wherein instruction (c)(ii) further includes the instruction of sorting the search results first by locally reachable nodes followed by the directly reachable nodes.

36. (Currently Amended) The computer readable medium of claim 34 wherein instruction (d) further includes the instructions of:

- (i) ~~using sending~~ the client IP address of the second node to the first node ~~such that the first node sends send~~ a request for the file ~~from the first node~~ to the second node using the client IP address of the second node; and
- (ii) sending the file from the second node to the first node using the client IP address of the first node.

37. (Currently Amended) A method for optimizing private network file transfers in a peer-to-peer public network, the peer-to-peer public network including a server and a plurality of nodes, wherein a first node and a second node of the plurality of nodes in the peer-to-peer public network are part of a same private network, the method comprising the steps of:

- (a) registering with the server whether network address translation (NAT) has been performed on the first and second nodes and whether the first and second nodes are directly reachable from other nodes on the public network;
- (b) receiving a search request from the first node for a file;
- (c) determining that the file is stored on the second node;
- (d) determining that the second node is part of the same private network as the first node, and therefore locally reachable by the first node, when
 - (i) NAT has been performed on both the first and second nodes and at the peer IDs of both the first and second nodes match, or
 - (ii) NAT has not been performed on either the first and second nodes and the subnet IDs of each first and second nodes match.
- (e) sending instructions by the server to the first node to request the file from the second node, such that the second node transfers the file to the first node over the private network.

38. (Previously Presented) The method of claim 37 further wherein step (a) includes the step of registering a client IP address, a subnet mask, and a peer IP address of both the first and second nodes with the server.

39. (Original) The method of claim 38 wherein step (a) further includes the step of determining that NAT has been performed on a particular node when the node's client IP address does not match the node's peer IP address.

40. (Original) The method of claim 39 wherein step (a) further includes the step of determining that a particular node is directly reachable from other nodes on the public network when the server can connect with the node using the node's client IP address.

41. (Original) The method of claim 40 wherein step (d) further includes the step of returning a list of search results from the server to the first node, where the list includes the identities and addresses of the matching nodes, IP addresses, and subnet masks.

42. (Original) The method of claim 41 wherein step (d) further includes the step of sorting the search results first by locally reachable nodes followed by the directly reachable nodes.

43. (Currently Amended) The method of claim 42 wherein step (e) further includes the steps of:

- (ii) ~~using~~ sending the client IP address of the second node to the first node such that the first node sends ~~send~~ a request for the file ~~from the first node~~ to the second node using the client IP address of the second node; and
- (iii) sending the file from the second node to the first node using the client IP address of the first node.

44. (New) The method of claim 1 wherein step (a) comprises receiving by the server the search request from the first node including at least one search term identifying the file, and step (b) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the

number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.

45. (New) The public network of claim 13 the search request from the first node comprises at least one search term identifying the file, and the server further operates to query a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.

46. (New) The computer readable medium of claim 25 wherein instruction (a) comprises receiving by the server the search request from the first node including at least one search term identifying the file, and instruction (b) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.

47. (New) The method of claim 37 wherein step (b) comprises receiving by the server the search request from the first node including at least one search term identifying the file, and step (c) comprises querying a database relating each one of a number of files including the file and at least one of the plurality of nodes in the peer-to-peer public network storing the one of the number of files using the at least one search term to identify at least one of the plurality of nodes including the second node storing the file.